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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,747	08/29/2003	Arthur Gritzky	134366 (553-1027)	1770
45436	7590	10/19/2009		
DEAN D. SMALL THE SMALL PATENT LAW GROUP LLP 225 S. MERAMEC, STE. 725T ST. LOUIS, MO 63105			EXAMINER CHENG, JACQUELINE	
			ART UNIT 3768	PAPER NUMBER
			NOTIFICATION DATE 10/19/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docket@splglaw.com

Office Action Summary

Application No.

10/652,747

Applicant(s)

GRITZKY ET AL.

Examiner

JACQUELINE CHENG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/309)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. **Claims 1-21** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-29 of U.S. Patent No. US 7,108,658 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim essentially the same subject matter of creating multiple enhanced images from a plane within an ultrasonic volume data set.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 2, 5, 6, 9, 10, 13, 14, 16-18, 23, and 25-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Goto (US 2004/0165766 A1) in view of Brandl (US 6,450,962 B1) in view of Sumanaweera (US 7,037,263 B2).
6. Goto discloses a method for forming and displaying an image comprising acquiring a volume image, reconstructed from a plurality of sectional slice images, from a medical image system such as an ultrasonic system (paragraph 0002, 0009). Goto processes the volume data to form multiple enhanced images each being based upon anatomic features such as bone, soft tissue or blood vessels (paragraph 0093, 0103). Any of the images that are created can be displayed simultaneously side by side (fig. 9A, paragraph 0104). What Goto does not disclose is identifying a plane within the volume, the plane having a thickness, however it would be obvious to one skilled in the art that in order to process things more quickly and efficiently, from a selected volume, a subvolume can be selected to be processed, such as disclosed in Brandl. Brandl discloses choosing a particular subvolume such as a particular organ or small tumor to be 3D rendered wherein the subvolume (rendering box) can be defined in size by a particular slice thickness and can be oriented in any direction. The slice thickness can also be changed using a rotatable knob (col. 3 line 55-col. 4 line 52). It would be obvious to combine Brandl with Goto as

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it would be obvious to have some sort of prescan in order to locate where exactly the observed object that is disclosed in Goto is located and then to narrow in on the location to quicken the processing time.

7. Goto does not disclose that the processor is configured to allow processing in real-time while acquiring the ultrasonic data. In the same field of endeavor Sumanaweera teaches segmenting and providing enhanced filtering or processes based upon anatomic features such as blood, bone and tissue, in real time showing that it is well known in the art to perform processing of various anatomical features in real time while acquiring ultrasonic images. It would be obvious to configure the processor of Goto to perform the segmentations of the images into the various anatomical features not only after the ultrasonic data set is stored, but while the data set is stored for the purpose of allowing the operator to immediately see the region of interest providing a quicker diagnosis.

8. **Claims 3, 4, 7, 8, 11, 12, 15, and 19-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Goto, Brandl, and Sumanaweera, and further in view of Argiro (US 5,986,662). Goto does not disclose the multiple enhanced images being based upon the volume renderings, however Argiro discloses a method for viewing a set of voxel data on a device. The set of voxel data can be from any well known imaging modality such as ultrasound (col. 10 line 30-32) and in particular the ultrasound data from Goto. After the voxel data has been input a protocol with a group of preset viewing settings show up. The protocol can be automatically chosen depending on the type of input data (col. 12 line 7-28). The group of preset viewing settings is made up of different volume rendering images of the data for the user to select

particular images from the gallery of images provided (col. 4 line 17-25. These different volume renderings can be to enhance different parts of the body such as cardia or bone mass and they can be depending upon the application the user wants, such as most dense carida, or least dense cardia of the data set (col. 3 line 20-40). These images that are selected will appear in the examination viewer, which can be split into multiple subwindows where multiple images can be displayed simultaneously. The examination view can be used to examine only certain subvolumes of the image data (a plane having a thickness), can have multiplaner views of views such as in a C-plane, and can be used to adjust each image in each subwindow (col. 14 line 25-50). One of these adjustment parameters is to adjust a slice thickness of the multiplanar reformatting views. By adjusting the slice thickness of each of the views each of the multiplaner views are transposed from being two-dimensional to being three-dimensional, the thicker slices in actuality being mini-volumes or slabs (col. 23-31). Therefore any desired images can be displayed simultaneously, multiple images volume rendered to display various anatomical features, multiple images of various plane thicknesses, multiple images of any well known volume rendering technique in the art (such as maximum density, surface texture, maximum transparency). It would be obvious to one skilled in the art at the time of the invention to process the ultrasound data from Goto using the method of Argiro in order to use the images to provide diagnosis and to create reports on the findings (abstract).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,350,238 B1 to Olstad.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACQUELINE CHENG whose telephone number is (571)272-5596. The examiner can normally be reached on M-F 10:00-6:30.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC

/Long V Le/
Supervisory Patent Examiner, Art Unit 3768